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OPPORTUNISTIC EARNINGS MANIPULATION AMONG BANKRUPT UNLISTED FIRMS
- HOW AND WHEN THEY DO THAT -

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OPPORTUNISTIC EARNINGS MANIPULATION AMONG BANKRUPT UNLISTED FIRMS - HOW AND WHEN THEY DO THAT –

Abstract:

Firms' bankruptcy is a problem not only related to companies but also affects social welfare. Analysing a matched sample of bankrupt and healthy unlisted companies from a code law institutional setting (Spain), this paper has three main objectives: it aims to demonstrate that bankrupt firms are more keen to manage financial statements in comparison with their non-bankrupt pairs; it investigates when and what practices they use; finally, it provides empirical evidence across time and sectors. Using proxies of sale and production cost manipulation, the results highlight upwards earnings manipulation among Spanish bankrupt firms in comparison with healthy ones, starting at least four years before the beginning of the legal procedure, sale and cost manipulation, used differently in each sector and across the time period investigated.

Keywords: Earnings management, Bankruptcy, Real manipulation activities, Code law setting, Unlisted companies.

MANIPULACIÓN DE RESULTADOS OPORTUNISTA ENTRE EMPRESAS EN CONCURSO NO COTIZADAS –CÓMO Y CUÁNDO LO HACEN-

Resumen:

El concurso de acreedores es un problema que no sólo afecta a las empresas sino también al bienestar social. Analizando una muestra pareada de empresas en concurso y sanas no cotizadas desde un enfoque institucional no anglosajón (España), este artículo tiene tres objetivos principales: demostrar que las empresas en concurso son más propensas a manipular los estados financieros en comparación con sus pares que no están en concurso; cuándo y qué prácticas usan; finalmente, se presenta evidencia empírica en el tiempo y entre sectores. Usando dos "proxis" de ventas y costes de producción, los resultados destacan una manipulación hacia arriba del resultado entre empresas en concurso en comparación con las sanas, empezando al menos cuatro años antes de su entrada en concurso, utilizando tanto manipulación en ventas como en coste de producción, de manera diferente entre sectores y en el período de tiempo investigado.

Palabras clave: Manipulación del resultado, Concurso de acreedores, Actividades reales de manipulación, Marco institucional del derecho romano, Empresas no cotizadas

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Introduction

Due to economic crisis situations, there is an increasing trend to financial distressed companies that may enter in the bankruptcy procedure and go to liquidation. The latter situation provokes huge economic, labour and social losses (Wu 2010). Indeed, the failure of a company has implications on many stakeholders such as employees, who lose their jobs; supplier companies, which might be significantly affected in the case the bankrupt firm is one of their main customers; creditors and lenders, who could not receive their money; government, which has to bear some of the social and welfare costs in addition to losses in terms of less taxation incomes due to the higher unemployment rate.

In this context, managers may feel under pressure and have incentives to take decisions in order to avoid or postpone firms' bankruptcy procedure. It is not unusual that some of those actions might include some kind of accounting manipulation strategies as have been demonstrated from previous literature. For example, Barth et al. (2008) suggest that earnings management is regarded as a tool that managers use to their own interests and Smith et al. (2001) provide empirical evidence that failing companies manipulate earnings more than healthy ones using income increasing accounting techniques. In bankruptcy situations, earnings manipulation might also lead to serious legal consequences as managers who intentionally alter the actual firm's financial performance might face the payment of a fine or even be sentenced to prison in case of ascertained frauds.

Bearing all these things in mind, analysing a matched sample of bankrupt and healthy unlisted companies from Spain, this paper has three main objectives: the first one is to demonstrate that bankrupt firms are more keen to manage financial statements in comparison with their non-bankrupt pairs during the years preceding the bankruptcy; it then investigates when bankrupt firms begin to manage their earnings and the practices they use to do that; finally it provides empirical evidence of bankrupt firms' earnings manipulation pattern across time and sectors. Using two proxies of real activities manipulation (manipulation of sales and manipulation of production costs), the results highlight more pervasive earnings manipulation practices among Spanish bankrupt

firms in comparison with healthy ones. These practices start at least four years before the beginning of the legal procedure. In addition, findings indicate that sale and cost manipulation are used differently in each sector and across the time period investigated, with interesting evidence of no sale manipulation the last year before filing for insolvency.

This research makes several interesting contributions to the extant literature. It investigates the earnings manipulation among bankrupt firms using for the first time, to the best of our knowledge, a code law institutional setting – Spain – totally different from Anglo-Saxon countries already analysing from previous studies. It is well known that institutional setting affects earnings management pervasiveness (Leuz et al. 2003) so we are adding a new approach to the literature. Hence, Spain is an interesting context because it is one of the most hit European countries by the financial crisis occurred in Europe at the time of the preparation of this study, particularly due to the lack of financial funding (BBVA Group 2012) and it is one of the most relevant countries within the European Union (EU) as it is the 5th largest in terms of GDP in 2011 (IMF)[i]. Moreover, the sample focuses exclusively on non-listed companies. Although no previous study totally concentrates on this segment of the economy probably because of the difficult data access, their relevance is indeed out of discussion as they represent 99.6% of Spanish companies and contribute to 60% of Spanish GDP (Eurostat 2011). Unlisted companies also characterise the majority of EU economy given that they account for more than 75% of European GPD (Ecoda 2010) and it is empirically demonstrated the, during financial crisis, insolvency problems are more critical among for these firms (Lussier and Halabi 2010). Additionally, this paper uses real activities manipulation proxies as it is tested that the majority of earnings management results from manipulating real transactions (Graham et al. 2005). This methodology is also suitable for bankrupt firms as it can separate manipulation of revenues from that of costs. Finally, it also reaches a very high level of detail, highlighting the trend, in each industry, with reference to the earnings manipulation methods used in a particular point in time before the bankruptcy procedure.

The rest of the paper is organized as follows. Section 2 reviews the existing literature on earnings management among bankrupt firms, the context of our research and presents the research questions. Section 3 details the sample selection procedure and describes

the methodology. Section 4 discusses the empirical results and section 5 concludes this research highlighting its main implications and limitations.

2. Background and research questions

2.1 Earnings management in non-healthy firms

Most of the earnings management literature has been analysed in presence of many disparate incentives that may stimulate managers to carry out accounting misbehaviours. There is evidence of earnings management in order to beat analysts' forecast and/or to achieve zero earnings surprise (e.g. Burgstahler and Dichev 1997, Lee et al. 2006), meet debt covenant (e.g. DeFond and Jiambalvo 1994, Jaggi and Lee 2002), increase bonus-related salary (e.g. Healy 1985, Shuto 2007), reduce taxation liabilities (e.g. Keating and Zimmerman 2000, Goncharov and Zimmermann 2006), decrease regulatory bodies' intervention (e.g. Jones 1991, Key 1997), taking advantages of favourable IPO or equity issues (e.g. Friedlan 1994, DuCharme et al. 2004). In addition to that, pressure brought by poor results or extreme financial situations could also amplify the use of accounting manipulation in order to alter actual firms' performance. Hence, evidence indicates that companies experiencing financial distress exhibit higher level of earnings management (e.g. Ohlson 1980, Beneish and Press 1995, Rosner 2003, García Lara et al. 2009). Economic crises further exacerbate these practices: on the one hand, they are seen as 'ideal' condition for managers in order to manipulate earnings downwards (e.g. 'big bath' or 'cookie jar' earnings manipulation strategies) and blame the economy for this situation (e.g De Angelo et al. 1994, Smith 2001, Saleh and Ahmed 2005); on the other hand, managers might also need to overcome adverse performance managing earnings upwards in order to avoid filing for a legal procedure. Most countries in the world set up a procedure, commonly in Court, usually called bankruptcy[ii], to manage and solve financial problems of firms that are on the brink of financial ruin. This procedure mainly relies on information gathered from troubled firms' annual reports that, as previously explained, have more incentives than healthy companies to manipulate them. Taking into account that high-quality earnings are essential for fair market valuations (Gaio and Raposo 2011) and rational stakeholders' decisions (Xu et al. 2007), earnings manipulation among bankrupt firms is

a relevant topic to research. Indeed, although the increasing trend in earnings management research area (DeFond 2010), literature related to the impact of earnings manipulation on bankrupt companies is relatively scarce (Balcaen and Ooghe 2006). The papers investigating earnings management among non-healthy firms which include a direct comparison with healthy pairs are reported in the Table 1.

From the analysis of the literature, several gaps may be highlighted. Firstly, it is worth noting that prior studies investigate only countries under an Anglo-Saxon institutional setting. It is well-known that institutional factors affect earnings management practices and Leuz et al. (2003) indicate that earnings management decreases in the level of legal protection afforded investors by countries' legal systems. Moreover, the factors that create incentives for earnings management may be different for these environments (Burgstahler et al. 2006), and 'some results of Anglo-Saxon studies may not hold in non Anglo-Saxon countries' (Vander Bauwhede and Willekens 2000, p.190). In addition, depending on the country, the bankruptcy procedure has different consequences (LaPorta et al. 1998, Claessens and Klapper 2005). So the analysis of also a code law institutional setting would be crucial as the merely extension of the extant evidence to this type of countries does not seem to be the best option. Finally, with the only exception of Kallunki and Martikainen (1999), previous studies only focus on listed companies, probably because of the easier availability of financial information, although empirical evidence shows that unlisted firms exhibit higher levels of earnings management and have different incentives for doing that (Ball and Shivakumar 2005). For these reasons, we decide to move the focus on a code law country, Spain, and non-listed companies.

Previous literature is then quite 'ambiguous' in the criteria used to define a firm as 'non-healthy'. Half of the studies reviewed use the 'legal' meaning of bankruptcy but others consider a company 'unsuccessful' or 'failed' on the basis of different economic variables such as total market return to investors (Lilien et al. 1998) or negative working capital and losses during a period of time (Rosner 2003). On the other hand, other papers choose selection criteria provided by commercial database that usually do not give as result only real bankrupt firms. This could be the case of Garcia Lara et al. (2009) which use the 'inactive company' criterion on FAME database or Beneish et al. (2012) which employ the 'technical default' criterion on Compustat database.

Table 1. Paper related to earnings management in non-healthy comparing with healthy firms

Authors	Sample (Country / Type of firms)	Definition of 'non-healthy' firms	Methodology of earnings management	Main findings
Lilien et al. (1988)	USA / Listed	Unsuccessful firms: the two lowest rated firms from 23 industries based on total market return to investors over a 10-year period (1974-1983)	Changes in accounting policies (Descriptive and univariate statistics)	Unsuccessful firms are more likely than successful firms to make accounting changes that increase income
Kallunki and Martikainen (1999)	Finland / Non-listed	Bankrupt firms: financially failed Finnish firms for the period of 1983-1989	Discretionary use of accounting flexibility allowed from Finnish GAAP (Descriptive and univariate statistics)	Firms use their accounting discretion to manage reported earnings upwards before failure
Smith et al. (2001)	Australia / Listed	Failing firms: non-financial firms included in the West Australian Division of ASC database from 1987 to 1988	Changes in accounting policies (Descriptive and univariate statistics)	Distressed firms show a greater tendency to increase reporting income
Rosner (2003)	USA / Listed	Failing firms: bankrupt, SEC sanctioned and stressed companies as in February 1998	Several definitions of accruals and changes in cash flow from operations (Descriptive and univariate statistics)	Non-distressed failing firms reflect significantly greater material income increasing accruals in going concern years
Charitou et al. (2007)	USA / Listed	Distressed firms: firms filed for bankruptcy during the period 1986-2001	Discretionary, non-discretionary, current and long-term accruals, changes in sales, cash flows and earnings (Descriptive and univariate statistics)	Distressed firms show downwards earnings management one year prior to the bankruptcy-filing
Leah and Newsom (2007)	USA / Listed	Bankrupt firms: firms which file for Chapter 11 from 1980 through 2000	Changes in current accrual (Teoh et al. 1998 model) (Descriptive and univariate statistics)	Firms manage their earnings prior to filing for bankruptcy: upwards five years and downwards in the two years prior to filing
García Lara et al. (2009)	UK and Ireland / Listed and non-listed	Failed firms: firms labelled as 'inactive' on FAME database from 1998 to 2004	Accruals model (Kasznik 1999), conditional conservatism (Basu 1997) and real activities manipulation (Roychowdhury 2006) (Univariate and multivariate analysis)	Failed firms manage earnings upwards in the four years prior to failure
Charitou et al. (2011)	USA / Listed and non-listed	Distressed firms: firms that filed a Chapter 11 bankruptcy petition during the period 1990-2004	Timeliness of earnings (Basu 1997) and managing toward small positive earnings (Univariate and multivariate analysis)	Distressed firms manage earnings towards a positive target more frequently than healthy firms
Jones (2011)	Australia / Listed	Failed firms: firms under the three major forms of bankruptcy proceeding available under the legislative provision of the Australian Corporation Act from 1989 to 2004	Discretionary accruals (Dechow et al. 1995) and capitalization of intangible assets (Univariate and multivariate analysis)	Failed firms show upwards earnings management capitalizing voluntarily intangible assets more aggressively than non-failed firms
Beneish et al. (2012)	USA / Listed	Distressed firms: firms labelled as in 'technical default on an accounting-based covenant' on Compustat and CRSP databases from 1983-1997	Accrual models (Jones 1991, Dechow et al. 1995 and Beneish 1998) (Univariate and multivariate analysis)	Distressed firms exhibit positive abnormal accruals two years prior the technical default but there is no evidence of upwards earnings management the year before the default

We exclusively focus on firms which actually went on bankruptcy. In general, the managers' behaviours would not be the same if the company is near to 'disappear' due to a merger or a voluntary liquidation than to file for bankruptcy. In many cases the latter is almost a 'death sentence' for the companies and they have many and different issues to deal with in comparison with other firms[iii]. This idea explains why, in case of bankruptcy, manager's behaviour is going to be supervised by a Court in detail. Furthermore, based on real bankrupt firms entered into the legal procedure, our study has important implications because of the legal and, more importantly, criminal consequences indicated in the Spanish legal framework in relation to bankruptcy. Indeed, managers could be sentenced to jail if it is demonstrated that they have manipulated earnings opportunistically in their own benefits (Art. 261, Spanish Criminal Code)[iv].

The evolution of the methodology from prior literature indicates that the first studies on earnings management among bankrupt firms investigate the effect of changes in accounting policies and use only descriptive and univariate statistics (Lilien et al. 1988, Smith et al. 2001). Later, basic definitions of accruals are employed (Rosner 2003, Charitou et al. 2007) while the latest papers use multivariate analyses and more developed accrual models (Jones 2011, Beneish et al. 2012). However, there is empirical evidence that demonstrates that real activities manipulation is relatively commonplace in presence of earnings management incentives (Roychowdhury 2006). Only Garcia Lara et al. (2009) use sale manipulation although using unlisted and listed companies together. In our study we want to investigate whether managers of bankrupt non-listed firms manipulate real transactions more than other companies. As evidence suggests that receivables and inventory are the most frequently managed accounts (Rosner 2003), both sale and production cost manipulation will be investigated.

As far as the main findings are concerned, all the papers analysed in Table 1 suggest that managers of non-healthy firms manipulate earnings upwards approaching the failure of the company with the exception of only two (Charitou et al. 2007, Leah and Newsom 2007) which reach the opposite conclusion. However, there are no exhaustive results in relation to when earnings manipulation occurs in bankrupt firms. Rosner (2003) suggests that this misbehaviour begins one year prior to bankruptcy-filing; Leah and Newsom (2007) find upwards earnings manipulation five years and downwards in

the two years prior to filing; Garcia Lara et al. (2009) observe upwards earnings management at least in the four years prior the failure while Beneish et al. (2012) find earnings manipulation two years before the default but fail to detect the same practices the year prior the failure. Finally, as there is no clear evidence about the trend of earnings manipulation practices across sectors and the combination of time and industries, we aim to extend our investigation also to these scenarios.

Bearing all this in mind, our research questions may be stated as follows:
RQ1: Do bankrupt firms in Spain manipulate earnings more than healthy ones?
RQ2: When do bankrupt firms in Spain manipulate earnings?
RQ3: How do earnings manipulation practices change across sectors?
RQ4: How do earnings manipulation practices change across years in different sectors?

2.2 The context of the research: Spain

Our literature review (see Table 1) indicates that extant research is scarce and completely focused on common law countries. As LaPorta et al. (1998) suggest that evidence from common law countries cannot be extended to contexts with a different legal tradition, our paper constitutes the first investigation of earnings management among bankruptcy firms in a civil-law context. Indeed, Spain is considered a code law country because its legal system has its roots in the French legal tradition (LaPorta et al. 1997, Spamann 2010) in the same way as other similar code law European countries such as France, Belgium, Greece, Italy, Netherlands and Portugal. Accordingly, previous research agrees that a country's legal setting also influences the financial reporting system (Saudagaran and Meek 1997, Archambault and Archambault 2003, Soderstrom and Sun 2007) and Schultz and Lopez (2001) point out that accounting judgments vary significantly across nations. They also advise that "national culture interacts with findings accepted as general within behavioural decision research". Also Doupnik and Salter (1995) suggest that the legal system is an institutional indicator that influences both how accounting rules are promulgated and their content while LaPorta et al. (1998) find that common law countries have better accounting systems than code law counterparts. Prior IFRS adoption, Spanish accounting was strongly influenced by fiscal legislation, bank equity finance and prudence but those characteristics are still

present for unlisted companies that still accounts under local GAAP. Indeed, although Spanish accounting standards for unlisted companies have been modified in 2007 in order to incorporate some of the IASB accounting concepts and eliminate alternative accounting methods as this should lead to improvements in accounting quality (Barth et al. 2008), they are not significantly different from their prior version.

National bankruptcy laws are also very important to analyse as it is verified that they condition the development of financial market (Levine 1998), the development of national entrepreneurship (Lee et al. 2011) and are crucial for investments in a country (Pindado et al. 2008). Indeed, there is evidence that demonstrates that the Spanish insolvency legislation blocks start-ups initiatives (Celentani et al. 2010), which instead might help during recession time. As the bankruptcy code and the efficiency of its enforceability determine the final outcome of the process (Wang 2012), the analysis of the legal environment is relevant.

The law governing the bankruptcy procedure in Spain is the Act on Insolvency (Ley Concursal) LC 22/2003 dated 9th July, which came into effect in 2004. This was an important change in the Spanish regulation as this law substituted two more complex legal procedures (liquidation and suspension of payment), one of them issued more than one century ago.

The bankruptcy procedure begins with the declaration of insolvency from a Judge. Creditors (compulsory bankruptcy) or managers (voluntary bankruptcy) may go to the Mercantile Court and request the filing for bankruptcy when firms present liabilities disproportionately larger than assets and/or chronically suffer from large accumulated losses (Xu and Wang 2009). The most common type of bankruptcy is the voluntary as managers can continue to run the company. Indeed, in case of financial problems, managers prefer starting the procedure themselves in order to avoid any creditors' legal action which would lead to the compulsory bankruptcy. In the latter case, the managers are removed from the company's board and are substituted by mercantile administrators appointed by the Judge.

Some national insolvency laws provide a preventative mechanism for negotiation between interested parties before the beginning of the bankruptcy procedure. These

negotiations are designed to determine whether the firm possesses a going-concern value (Denning et al. 2001). In Spain, as in Italy and Finland, this special procedure intended to avoid bankruptcy is called 'preconcursal' and stops any creditor claim and aims to reorganize the firm within four months. A firm is eligible for 'preconcursal' if it proves to be solvent and it is only temporarily unable to meet its financial obligations. Consequently, a quick reorganization agreement would save managers from entering the bankruptcy process and its related consequences including time delay, costs and the dissolution of the business at the end of a time-consuming process.

Once the legal procedure begins, there is a first period where lawyers, economists and other parties appointed by a Judge analyse the economic and financial situation of the company. This is called 'common phase'. Results from this process determine if a company is fit for a going concern agreement, in other words reorganization, or liquidation. Once the Court decides that a company is solvent, firms and creditors can negotiate the terms of reorganization[v]; on the contrary, if the Court assesses that the firms is not solvent, the company goes to liquidation. The purpose of reorganization is to preserve the business and allow firms staying on the market. The purpose of liquidation is to sell firms' assets to satisfy the creditors as much as possible. The procedure finishes when the Court requests have been all met.

3. Methodology

3.1 Sample selection

This paper uses data extracted from the webpage 'www.registroconcursal.es' which provides us with the name and the fiscal number of all the bankrupt companies in the twelve Commercial Justice Courts in the region of Madrid. The initial data set includes all the unlisted companies in the bankruptcy process in Madrid from May to June 2010 which total 1,387 during this period of time[vi]. Using firms' fiscal number, financial and accounting information has been obtained from SABI database, a database provided by Bureau Van Dijk that includes comprehensive information of more than 940,000 companies operating in Spain. From the latter database a control sample of healthy firms has been also extracted. Firms have been matched on the basis of the industry in

which they operate[vii], the legal form[viii] and years. We group the companies into four industries – 'Construction', 'Industrial', 'Services' and 'Wholesalers' – on the basis of the NSI (National Statistics Institute) classification. In line with previous studies that use real activities manipulation methodology (e.g. Garcia Lara et al. 2009), we aim to analyse earnings management practices between the first and the fourth year before the beginning of the legal procedure for bankruptcy. For this reason, we excluded all firms without an adequate time series of data together with their pairs. At the end of this process, the sample counts 362 bankrupt firms and 362 healthy firms over a four-year period for a total of 2,896 firm-year observations.

3.2 Real Activities Manipulation

In this paper, we analyse earnings management through the impact of real activities manipulation in post-bankrupt and continuing firms. As previously explained, we use this dimension of earning management because of its fundamental importance as documented by Graham et al. (2005) which concludes that earnings management is not only widely practiced, but that the majority of earnings management results from manipulating real transactions. In addition, compared to research that investigates accruals-based earnings management, studies on real activities management are scarce (DeFond 2010) so we also extend this branch of literature on failed unlisted companies operating in a code law country. Following the methodology introduced by Roychowdhury (2006), we focus on sale and production cost manipulation as they usually are the most significant accounts in a firm's annual report and receivables and inventory are the most frequently managed items (Ricci 2011). All variables used in this paper are explained in Table 2.

3.2.1 Sale manipulation

First of all, we analyse sale manipulation estimating the following cross-sectional regression (1), in line with Garcia Lara et al. (2009), separately for each of the four industries investigated to calculate the normal level of cash flow given reported sales.

$$CFO_{it}/A_{t-1} = \alpha + \beta_1(1/ASSETS_{it-1}) + \beta_2(SALES_{it}/ASSETS_{it-1}) + \\ + \beta_3(\Delta SALES_{it}/ASSETS_{it-1}) + \varepsilon_{it} \qquad (1)$$

For each firm, abnormal cash flow (*ABNCFO*) is obtained by subtracting the actual *CFO* from the 'normal' *CFO* calculated using the estimated coefficients from the above equation (1).

Table 2. Variable description and measurement

ABNCFO	Is a proxy for sale manipulation.
ABNPROD	Is a proxy for production cost manipulation.
SALES	Total sales of the company.
ASSETS	Total assets of the company.
CFO	Cash flows from operation.
PROD	Total production costs: cost of goods sold plus change in inventory.
Size	Is the natural logarithm of the total assets.
NetIncome	Is net income scaled by beginning-of-year total assets.
BKRP	Is a dummy variable that takes the value of 1 for bankrupt firms and 0 for the healthy ones.

3.2.2 Production cost manipulation

The manipulation of production costs is analysed by the following model (2) which, in accordance with Roychowdhury (2006), is used to estimate the normal level of production costs (*PROD*), defined by the sum of the cost of goods sold and change in inventory. The model is estimated separately for each of the four industries investigated.

$$PROD_{it}/ASSETS_{it-1} = \alpha + \beta_1(1/ASSETS_{it-1}) + \beta_2(SALES_{it}/ASSETS_{it-1}) +$$
$$+ \beta_3(\Delta SALES_{it}/ASSETS_{it-1}) + \beta_4(\Delta SALES_{it-1}/ASSETS_{it-1}) + \varepsilon_{it} \qquad (2)$$

Abnormal production costs (*ABNPROD*) are then the difference between actual costs and the 'normal' level of expenses resulting from the use of the estimated coefficients from equation (2).

ANBCFO and *ABNPROD* are winsorised at the 1st and the 99th percentile to avoid that our findings might be biased due to the presence of outliers.

Model (3), in line with Roychowdhury (2006) methodology, is finally estimated for gathering evidence related to our proposed research questions:

$$Y_{it} = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it} \qquad (3)$$

Where Y is, in turn, *ABNCFO* and *ABNPROD*.

In the hypothesis that bankrupt firms manage earnings upwards the years before the legal failure, we would observe β_3 to be negative and significant when the dependent variable is *ABNCFO*. Indeed, it would be consistent with an abnormally low level of cash flow, given reported sales, among bankrupt firms probably due to sale manipulation, e.g. fictitious sales, abnormal discounts or more lenient credit terms. In the same hypothesis of upwards earnings management, we would also find β_3 to be significantly positive when the dependent variable is *ABNPROD*. Indeed, it would indicate that bankrupt firms exhibit higher production costs as result of an increase of the level of production which lowers fixed costs per unit with a consequent decrease of the cost of goods sold and an increase of the operating margin.

Model (3) is first calculated for the entire sample (including years and industries dummies) in order to investigate whether, on average, non-listed bankrupt firms, in Spain, are more likely to manipulate earnings through sales and production costs than healthy firms the years before the actual bankruptcy. We then run model (3) separately for each year preceding the actual beginning of the legal procedure (including industries dummies) and for each industry considered (including years dummies) to analyse whether, on average, the choice of earnings manipulation practices among Spanish bankrupt firms depends on the number of years preceding the bankruptcy procedure and/or the sector in which they operate. Finally, the model is estimated for the combination of sectors and years to highlight any trend, in each industry, with reference to the earnings manipulation methods used in a particular point in time.

All regression models explained above are estimated using OLS with robust standard errors clustered by firm.

4. Results and discussion

4.1 Descriptive statistics and univariate analyses

Table 2 shows descriptive statistics for the variables used in our model (3) as well as total sales and assets. The latter variables aim to provide information about the dimension of the firms investigated. They are presented separately for bankrupt and healthy firms. Statistical significance of the differences in mean, median and standard deviations between the two groups of firms is also reported.

Table 3. Descriptive Analysis: bankrupt and healthy companies

	Bankrupt Companies				**Healthy Companies**			
	N.	**Mean**	**Median**	**St. Dev**	**N.**	**Mean**	**Median**	**St. Dev**
ABNCFO	1,448	0.071	0.070	0.521	1,448	0.201***	0.140***	0.458
ABNPROD	1,448	0.039	-0.014	0.222	1,448	-0.044***	-0.050***	0.204**
Size	1,448	14.723	14.483	1.623	1,448	14.116***	13.945***	1.898***
NetIncome	1,448	-0.053	0.006	0.362	1,448	0.027***	0.020***	0.342***
Assets	1,448	10,613,656	1,949,649	28,698,110	1,448	8,871,553*	1,138,260***	25,268,874
Sales	1,448	7,123,263	2,264,620	15,295,127	1,448	7,422,940	937,137***	21,564,350

*, **, *** represent significance at the 10%, 5%, and 1% level, two-tailed, of differences between mean, medians and standard deviation between firms which are and firms which are not controlled by listed companies.
For variable definitions, see Table 2.

Table 2 provides evidence that *ABNCFO* among firms which started a legal procedure for bankruptcy (0.071) is significantly lower than that observed for the group of healthy firms (0.201) at the 1% level. This result indicates an abnormally lower level of cash flows from operation given reported sales among bankrupt firms that can be the result of sale manipulation in order to increase net income fictitiously. Consistently, the variable *ABNPROD* equals 0.039 among bankrupt companies while it measures -0.044 for healthy firms with a difference which is significant at the 1% level. As previously explained, higher level of production costs can be used from troubled firms to lowering fixed costs per unit with a consequent decrease in the cost of goods sold and a corresponding increase in the operating margin. This income increasing outcome is in line with most of prior literature but, using proxies of sale and production cost

manipulation, not previously used at the same time on this topic, we have here evidence that managers manipulate earnings upwards using sales and production costs jointly.

The logarithm of total asset among the former group (14.72) is higher than the same figure among the latter (14.12), evidence that healthy firms are, on average, smaller. This result is in line with Carter and Van Auken (2006) who corroborate that size has no bearing on failure. Finally, bankrupt firms show, on average, a negative income against a profit reported by healthy firms. The total assets average around 10.5 million for bankrupt firms and 9 million among the healthy pairs. The level of sales is similar between the two groups of firms (with an average of around 7 million), but it could be due to the presence of potential sales manipulation highlighted above.

4.2 Multivariate analyses

4.2.1 Correlation analysis

We report correlation matrix in Table 4.

Table 4. Correlation matrix

	BKRP	ABNCFO	ABNPROD	Size	NetIncome
BKRP					
ABNCFO	-0.132***				
ABNPROD	0.190***	-0.194***			
Size	0.169***	0.044**	-0.040**		
NetIncome	-0.113***	0.143***	-0.558***	0.048***	

Notes:
*, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better, two-tailed. For variable definitions, see Table 2.

Table 4 supports the main results provided by our descriptive statistics and univariate analyses. It shows a negative association between bankrupt firms and *ABNCFO* (p-value = 0.000) which indicates a lower cash flow given the level of sales among this group of companies. The latter exhibits also a positive relation (p-value = 0.000) with *ABNPROD,* evidence of higher production costs than their healthy pairs and a negative

and significant coefficient with the variable *NetIncome* (p-value = 0.000) indicating that bankrupt companies report lower profits in their income statement.

4.2.2 Regression analysis

We start our regression analyses presenting the results of our models for earnings management estimated for the entire sample. These are reported in Table 5.

Table 5. Bankrupt firms and real earnings management

	(A) **ABNCFO**	**(B)** **ABNPROD**
INTERCEPT	-0.154	0.020
	(0.108)	(0.048)
Size	0.015*	-0.005
	(0.008)	(0.003)
NetIncome	0.197*	-0.327***
	(0.112)	(0.065)
BKRP	**-0.117*****	**0.058*****
	(0.022)	**(0.012)**
Observations	2,896	2,896
R-squared	0.187	0.332
Year Dummies	Yes	Yes
Industry Dummies	Yes	Yes

Notes:
P-values calculated from firm-level clustered standard errors which appear in parenthesis below the coefficient estimate. *, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better.

Regression models:
Col. A: $ABNCFO_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
Col. B: $ABNPROD_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
For variable definitions see Table 2.

Findings fully support previous literature (e.g. Rosner 2003, Garcia Lara et al. 2009) that bankrupt firms manipulate earnings upwards more than healthy companies before the actual bankruptcy begins. In addition, it is consistent across our two measures of real activities manipulation supporting the evidence from our descriptive statistics that upwards earnings management is achieved using a combination of sale and cost manipulation. Indeed, in column A, results from model (3) with *ABNCFO* as dependent variable are presented. The model is strongly significant (p-value = 0.000) so is the

negative coefficient β_3 (β = -0.117; p-value = 0.000) which indicates that bankrupt firms show abnormally lower cash flow compared to the other group of firms, given reported sales. This might be evidence of sale manipulation, using for example unusual discounts, extension to credit terms, premature and/or fictitious sales recognition, etc. Column B re-estimate model (3) using *ABNPROD* as dependent variable. The significance of the model is strong (p-value = 0.000) and the coefficient β_3 is positive and significant (β = 0.058; p-value = 0.000), indicating that bankrupt firms exhibit higher production costs as result of an increase in the level of production which lowers fixed costs per unit with a consequent decrease of the cost of goods sold and an increase of the operating margin compared to the healthy ones. Both this evidence is consistent with Rosner (2003) which reaches the same conclusion using a different methodology with a different institutional setting and sample (USA and listed companies).

4.2.2.1 Bankrupt firms and real activities manipulation across years

To better frame our research and understand when it is more likely that earnings management occurs among bankrupt firms, Table 6 presents the estimation of our models separately for each year investigated. Earnings manipulation is analysed starting from the fourth year before the legal procedure to the year immediately before this situation.

Interesting evidence comes from Table 6. First of all, it suggests that, earnings management, using both sale and cost manipulation, starts at least four years before the actual bankruptcy procedure, in accordance with the evidence observed by Garcia Lara et al. (2009) in relation to UK companies. In addition, Table 6 shows that our earnings management practices investigated are not used consistently across the years. In particular, bankrupt entities manage real sales before the actual bankruptcy but, accordingly with Kallunki and Martikainen (1999), it does not happen the year immediately before the legal procedure. This might be due to the fact that it is too late to manage this kind of transactions which involve third parties, such as customers, or because the level of control from external bodies increases so the manipulation of sales could be more easily discovered; it could also motivated by the time-period covered which clashes with an economic crisis that makes sale manipulation more complicated to achieve. On the other hand, bankrupt firms manage production costs over the entire

period investigated, as evidenced by the positive and strongly significant coefficients from model (3) when *ABNPROD* is used as dependent variable. This provides evidence that, despite aware of the serious legal consequences, managers never stop to manipulate earnings before filing for bankruptcy and, even when some strategies become impracticable (see sale manipulation in year t-1), they find other methods to do that.

Overall, our results suggest that the number of years preceding the bankruptcy affects the way management manipulate earnings.

Table 6. Bankrupt firms and real earnings management (analysis by year). Table reports only the coefficients of interest.

		(A) ABNCFO	(B) ABNPROD
Year -4	***BKRP***	**-0.179***** **(0.037)**	**0.068***** **(0.015)**
	Observations	724	724
	R-squared	0.128	0.248
	Industry Dummies	Yes	Yes
Year -3	***BKRP***	**-0.121***** **(0.334)**	**0.032***** **(0.015)**
	Observations	724	724
	R-squared	0.136	0.322
	Industry Dummies	Yes	Yes
Year -2	***BKRP***	**-0.102***** **(0.031)**	**0.027**** **(0.013)**
	Observations	724	724
	R-squared	0.242	0.349
	Industry Dummies	Yes	Yes
Year -1	***BKRP***	**-0.009** **(0.029)**	**0.087***** **(0.024)**
	Observations	724	724
	R-squared	0.382	0.441
	Industry Dummies	Yes	Yes

Notes:
P-values calculated from firm-level clustered standard errors which appear in parenthesis below the coefficient estimate. *, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better.

Regression models:
Col. A: $ABNCFO_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
Col. B: $ABNPROD_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
For variable definitions see Table 2.

4.2.2.2 Bankrupt firms and real activities manipulation across industries

Although earnings management practices can be affected by the sector in which firms operate (Gaio 2010) because of the different nature of revenues and costs, none of the previous research has investigated that among non-healthy firms. Indeed, the analysis of a relation between earnings management practices and industry can be relevant to the public interest in order to locate the areas of the financial statement that might need a closer analysis in case of suspicious activities or failure problems. For this reason, we present our models separately for each of the four sectors analysed in the following Table 7.

Table 7. Bankrupt firms and real earnings management (analysis by industry). Table reports only the coefficients of interest.

		(A) ABNCFO	(B) ABNPROD
Construction	***BKRP***	**-0.038*** **(0.028)**	**0.046***** **(0.015)**
	Observations	812	812
	R-squared	0.024	0.507
	Years Dummies	Yes	Yes
Industrial	***BKRP***	**-0.156***** **(0.027)**	**0.057***** **(0.017)**
	Observations	812	812
	R-squared	0.055	0.381
	Years Dummies	Yes	Yes
Service	***BKRP***	**-0.131**** **(0.062)**	**0.100***** **(0.026)**
	Observations	784	784
	R-squared	0.118	0.357
	Years Dummies	Yes	Yes
Wholesalers	***BKRP***	**-0.079***** **(0.019)**	**-0.026** **(0.031)**
	Observations	488	488
	R-squared	0.082	0.308
	Years Dummies	Yes	Yes

Notes:
P-values calculated from firm-level clustered standard errors which appear in parenthesis below the coefficient estimate. *, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better.

Regression models:
Col. A: $ABNCFO_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
Col. B: $ABNPROD_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
For variable definitions see Table 2.

Table 7 suggests that companies operating in different sectors use different approaches in order to manipulate earnings. Companies operating in the construction industry are more likely to use, on average, production cost manipulation, given the higher significance of the related coefficient (β = 0.046; p-value = 0.003). One possible explanation for that might be found to a drop in demand and the 'real estate bubble' at the time the sample was referred: this context of recession makes sales more difficult to manipulate. Moreover, accounting cost recognition choices and difficulties in the calculation of the cost of the goods sold in this sector give managers more opportunities to use this kind of earnings manipulation.

Firms which focus their business on the industrial sector use both sale (β = -0.156; p-value = 0.000) and production cost (β = 0.057; p-value = 0.001) manipulation in order to conceal firms' real performance. In this case, managers have more options to alter both revenues and costs as the market did not observe significant contractions during the period analysed.

Bankrupt services firms mainly use production costs as tool of earnings management (β = 0.100; p-value = 0.000), especially because it is the easiest way for them given the difficulties in reliable checks of this kind of costs. There is also a weaker evidence that they manage real sales (β = -0.131; p-value = 0.035). This trend could be explained by the presence, in these companies, of many intangible components that are difficult to observe reliably, such as hours worked, type and quality of services provided.

Finally, wholesalers that went for a bankruptcy procedure obfuscate their real financial performance only using sale manipulation (β = -0.079; p-value = 0.000) while there is no evidence of the use of production cost manipulation (β = -0.026; p-value = 0.411). The latter situation could be explained by the fact that wholesaler are not involved in any (significant) production activity as they mainly act as intermediate traders buying goods from producer, selling them, without any (significant) industrial transformation, to other firms or to final customers.

4.2.2.3 Bankrupt firms and real activities manipulation across years and industries

Having established that the way distressed firms manage financial statement differs depending on the sector in which they operate and the number of years preceding the

beginning of the bankruptcy procedure, in the following analyses we investigate, with a very high level of detail, whether and how firms operating in each of the four sectors considered manage financial numbers in each of the four years preceding the legal procedure for bankruptcy.

We start our analysis from the construction industry and report the results in Table 8 below.

Table 8. Bankrupt firms and real earnings management (Construction sector by year). Table reports only the coefficients of interest.

		(A) ABNCFO	(B) ABNPROD
Year -4	***BKRP***	**-0.126**** **(0.058)**	**0.056***** **(0.020)**
	Observations R-squared	203 0.040	203 0.486
Year -3	***BKRP***	**-0.041** **(0.050)**	**0.008** **(0.017)**
	Observations R-squared	203 0.043	203 0.498
Year -2	***BKRP***	**0.041** **(0.049)**	**0.028*** **(0.017)**
	Observations R-squared	203 0.036	203 0.580
Year -1	***BKRP***	**0.001** **(0.054)**	**0.061***** **(0.017)**
	Observations R-squared	203 0.031	203 0.671

Notes:
P-values calculated from firm-level clustered standard errors which appear in parenthesis below the coefficient estimate. *, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better.

Regression models:
Col. A: $ABNCFO_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
Col. B: $ABNPROD_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
For variable definitions see Table 2.

Consistently with Table 7, findings show that construction firms mainly use the manipulation of production costs in order to mislead stakeholders from the firm's real financial performance. Indeed signs of this type of manipulation are found in three out of the four years analysed. They also manipulate sales but only the fourth year before the legal procedure begins. The reason of this evidence could be attributed to the fact

that we consider firms in bankruptcy in 2010, so years from t-3 to t-1 clash with the serious crisis in the construction industry which Spain observed during this period. A significant drop of houses' prices due to the construction's bubble, together with an increase of the level of regulators' control, probably made sale manipulation difficult to use. In this situation, construction companies tried to postpone their failure focusing on cost manipulation which is particularly marked especially at the end of the life of the companies (β = 0.061; p-value = 0.000). This is, for these firms, the easiest way to alter their financial performance as the 'last attempt' to avoid the bankruptcy procedure.

Results pertaining to the industrial sector are reported in Table 9.

Table 9. Bankrupt firms and real earnings management (Industrial sector by year). Table reports only the coefficients of interest.

		(A) ABNCFO	(B) ABNPROD
Year -4	***BKRP***	**-0.173***** **(0.054)**	**0.056***** **(0.022)**
	Observations	203	203
	R-squared	0.054	0.332
Year -3	***BKRP***	**-0.140***** **(0.047)**	**0.022** **(0.023)**
	Observations	203	203
	R-squared	0.184	0.486
Year -2	***BKRP***	**-0.161***** **(0.052)**	**0.007** **(0.017)**
	Observations	203	203
	R-squared	0.054	0.465
Year -1	***BKRP***	**-0.053** **(0.047)**	**0.048**** **(0.027)**
	Observations	203	203
	R-squared	0.211	0.631

Notes:
P-values calculated from firm-level clustered standard errors which appear in parenthesis below the coefficient estimate. *, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better.

Regression models:
Col. A: $ABNCFO_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
Col. B: $ABNPROD_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
For variable definitions see Table 2.

The approach used in the industrial sector is different from the industry presented before. Companies in this sector rely more on sale manipulation, observed until the year before the legal procedure for bankruptcy. Interestingly and consistently with general

findings, these practices seem not to occur the year before the beginning of the legal procedure, given the increase of the level of scrutiny from third parties or because of the lack of customers. During this particular period of time, entities overcome this problem manipulating production costs as ultimate attempt to make their financial statement looking better as indicated by a positive and significant coefficient β_3 of model (3), estimated in t-1, with *ABNPROD* as dependent variable ($\beta = 0.048$; p-value = 0.034), which was instead not significant during the previous two years.

Evidence related to firms operating in the services sector is presented in Table 10.

Table 10. Bankrupt firms and real earnings management (Services sector by year). Table reports only the coefficients of interest.

		(A) ABNCFO	(B) ABNPROD
Year -4	***BKRP***	**-0.183****	**0.124*****
		(0.104)	**(0.046)**
	Observations	196	196
	R-squared	0.063	0.261
Year -3	***BKRP***	**-0.129***	**0.065****
		(0.081)	**(0.030)**
	Observations	196	196
	R-squared	0.037	0.400
Year -2	***BKRP***	**-0.175****	**0.083*****
		(0.081)	**(0.030)**
	Observations	196	196
	R-squared	0.183	0.354
Year -1	***BKRP***	**0.055**	**0.131*****
		(0.069)	**(0.040)**
	Observations	196	196
	R-squared	0.370	0.425

Notes:
P-values calculated from firm-level clustered standard errors which appear in parenthesis below the coefficient estimate. *, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better.

Regression models:
Col. A: $ABNCFO_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
Col. B: $ABNPROD_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
For variable definitions see Table 2.

Because costs and revenues for this kind of companies include a lot of intangible items which are tricky to check reliably, they have incentives to manipulate both these classes of accounts in order to alter the financial performance of the company. This evidence is

supported by our results. Indeed, sale manipulation is observed every year, with the exception, in accordance with our general findings and evidence from other sectors, of the year immediately before the beginning of the legal procedure for bankruptcy. The manipulation of production costs is quite important given the strong significance of the related coefficient that is always either at the 5% or at the 1% level. In addition, these practices are always observed through the period under investigation. It is worth also highlighting that the production cost manipulation is more significant than sale manipulation across the years observed.

Our final analysis involves companies operating as wholesalers. Results are presented in Table 11.

Table 11. Bankrupt firms and real earnings management (Wholesale sector by year). Table reports only the coefficients of interest.

		(A) **ABNCFO**	**(B)** **ABNPROD**
Year -4	***BKRP***	**-0.144***** **(0.047)**	**-0.049** **(0.037)**
	Observations	122	122
	R-squared	0.192	0.266
Year -3	***BKRP***	**-0.086**** **(0.051)**	**-0.013** **(0.038)**
	Observations	122	122
	R-squared	0.071	0.114
Year -2	***BKRP***	**-0.037** **(0.043)**	**-0.040** **(0.034)**
	Observations	122	122
	R-squared	0.165	0.197
Year -1	***BKRP***	**-0.052** **(0.046)**	**-0.024** **(0.027)**
	Observations	122	122
	R-squared	0.084	0.645

Notes:
P-values calculated from firm-level clustered standard errors which appear in parenthesis below the coefficient estimate. *, **, *** indicate that a coefficient is statistically significant at the 10%, 5%, and 1% level or better.

Regression models:
Col. A: $ABNCFO_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
Col. B: $ABNPROD_t = \alpha + \beta_1 Size_{it} + \beta_2 NetIncome_{it} + \beta_3 BKRP_{it} + \varepsilon_{it}$
For variable definitions see Table 2.

Accordingly with the structure of the sector, we consistently do not observe any sort of production cost manipulation given that firms in this sector – wholesale – does not present any (significant) aspect of production as their business is based on buying and selling goods without any (significant) physical transformation. On the other hand, we find evidence of sale manipulation which, in accordance with all the other sectors, stops while approaching the year of the actual bankruptcy. In this particular case, we do not observe sale manipulation from the second year preceding the legal bankruptcy procedure. A possible explanation could be the singular characteristics of this industry: the competition is very high and the value added is low; this makes even sale manipulation more difficult to achieve in comparison with other sectors. For example, it is very challenging to manipulate low selling price products especially when other companies may offer exactly the same item on the market.

5. Conclusions

This paper investigates real activities manipulation among bankrupt firms operating in Spain using a matched pair sample of healthy firms during the years preceding the bankruptcy.

Findings support the evidence that managers of bankrupt firms use upwards earnings management through real activities manipulation during the years before the actual bankruptcy. In addition, using sale and production cost management proxies, not previously used jointly on this topic, our findings indicate that companies use a combination of sale and production cost manipulation in order to postpone the legal procedure. These practices start at least four years before the bankruptcy although sale manipulation stops the last year before distress. Furthermore, the methods used to manipulate earnings differ across industries and in relation to the number of years approaching the legal procedure with the interesting evidence that, close to the end of a company's life, management stops using sale manipulation probably due to a closer monitoring from external bodies.

Results of this study have several implications. On average, bankruptcy is not only a result of economic crisis but includes a certain degree of managers' misbehaviours.

According to our results, this should be taking into account when the parts involved in the legal process analyse firms' situation and future. Indeed, evidence indicates that managers of companies operating in a code law country manipulate real activities even if they are aware of the criminal implication this might have. This could be explained by the weak legal enforcement that does not effectively constrain managers' misbehaviours. Findings might also attract the attention of monitoring bodies and auditors as they highlights the areas, in each industry, that need a closer monitoring in presence of any signal of financial distress or controversial management behaviours. For example, in the case of companies operating in wholesale sector, only sales need closer controls while production costs do not seem affected by any manipulation. Evidence then suggests that management uses the nature of the industry in which firms operate in order to locate areas that are easier to alter in order to inflate earnings during the years before the bankruptcy and, when it is possible, they use a combination of both sale and production cost manipulation. In addition, our results indicate that, close to the company's end, managers struggle with an increase of the level of monitoring, distrust from stakeholders, at a point that they stop to manipulate transactions which involve third parties (such as customers) using sale manipulation. On the other hand, this does not discourage them to continuing using the level of production to improve company's performance as the last desperate attempt to escape from filing for bankruptcy. Finally, evidence clearly indicates that all parties involved in the 'preconcursal' procedure may keep in mind that any decision taken on the basis of firms' annual reports might be biased due to manipulated financial figures.

The paper is not free from limitations. Findings are based on two proxies of real activities manipulation and we are aware that there are many other earnings management proxies that could be taken into account. Furthermore, although our results are in line with previous research based on different institutional settings, the generalization of our results is difficult given the detailed analysis of only one country. We believe that our findings might be extended to other similar code law European countries such as France, Belgium, Greece, Italy, Netherlands and Portugal, anyway future research using other realities with our similar institutional setting or comparison between different legal environments should be needed to corroborate them and also to analyse factors that could affect management misbehaviours. Finally, the results may be conditioned by the economic crisis observed by EU at the time this paper has been

prepared. The investigation of earnings manipulation practices conditional to the outcomes of the bankruptcy procedure (for example, reorganization versus liquidation) could be an interesting topic on this research line.

NOTES:

[i] Information about GDP has been retrieved from the International Monetary Fund website www.imf.org.
[ii] In general, we use the term 'bankruptcy' to refer to firm failure in a legal process. 'Failure', 'Insolvency' and 'bankruptcy' are used with the same sense throughout this paper.
[iii] Official bankruptcy statistics illustrate that only one in ten Spanish companies with financial problems survives (NSI, 2010).
[iv] Art. 261 states that 'whoever were to knowingly present false data concerning his accounting status during insolvency proceedings, in order to unduly obtain a declaration thereof, shall be punished with a sentence of imprisonment from one to two years and a fine from six to twelve months'.
[v] Because the long time the Court needs to reach a decision, it is not uncommon that also a reorganization agreement could end in liquidation.
[vi] Individual firms have been excluded from the analysis. In our sample there was only one in the bankruptcy webpage during the period of sample extraction.
[vii] To match a company on the basis of the industry, we use the first two digits of the NACE Rev. 1 sector classification.
[viii] We indentify two legal forms: 'corporation' and 'limited companies'.

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